REMARKS/ARGUMENTS

Claims 25 and 27-32 stand in the present application. Reconsideration and favorable action is respectfully requested in view of the following remarks.

In the Office Action, the Examiner has rejected claims 25 and 27-32 under 35 U.S.C. § 102(e) as being anticipated by Feld et al. Applicants respectfully traverse the Examiner's § 102 rejection of the claims.

The Examiner states that "[a]pplicants have merely alleged that Feld et al. does not teach the limitation 'a set of weights' without clearly pointing out virtual modeling bank system in Feld et al. is not same as claimed invention" and that "applicants fail to define what the limitation 'a set of weights' refers in the specification." *See*, Final Office Action at page 4. Applicants respectfully address the Examiner's concerns below.

The present specification clearly defines the claim limitation of "a set of weights" as follows:

> In order to meet the above problem, the present invention provides for a new avatar (for example corresponding to a user and generated in an avatar booth such as those provided by BTexact Technologies and described in Personal Virtual Humans: Inhabiting The Talk Zone and Beyond, Daniel Ballin et al, BT Technology Journal, Kluwer, January 2002) to be projected onto a database of avatar prototypes. This gives a new representation of the avatar as a **set of weights** on this database. These **weights** can be used to sum the prototypes to produce a new mesh representation of the avatar. A parallel database of clothes prototypes is produced to that of the database of avatar prototypes. Clothing for the new avatar is then produced by summing over the database

> of clothes prototypes using the same **weights** as for the avatar prototypes.
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> This allows an object model such as an avatar to be analysed and compared to a database of existing object models, at least some of which and preferably each of which are slightly different, and **a set of weights** representing the object model with respect to the database to be generated. As the **weights** can be generated and stored at any time (for example on creation of the first object model), they can be immediately available for use in subsequent computations.
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> Moreover, the **weights** themselves can be used to accurately represent the first object model, and hence can be used as a bandwidth efficient representation of the object model if information representing the model is required to be transmitted over a network.
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> In the second aspect the advantage is obtained that an object model of a second type can be generated with relatively little computational intensity, by merely summing according to the obtained or stored **weights** the predefined object models of the second type. As each of these models are slightly different from each other, the different **weightings** applied to each model in the summation results in a completely new model being generated.

See, present specification at page 3, lines 2-11, page 3, lines 26-34, and page 4, lines 11-19 (emphasis supplied). Furthermore, there is a detailed description of how a set of weights can be generated and then used, which can be found in the present specification at page 12, line 10 to page 14, line 29, which refers to Figures 3, 4 and 5. A mathematical description of the generation of an appropriate set of weights can be

found in the present specification at page 19, line 5 to page 22 line 4, with reference to Figures 7 and 8.

Moreover, the reason that Feld et al. is not the same as Applicants' invention is that Feld et al. uses an entirely different technique to mathematically describe a body and a garment that may be fitted to that body. Feld et al. uses a three dimensional model that is formed from a plurality of polygons, with each of the polygons being defined by a vertice that denotes the center of gravity of the polygon. *See,* Feld et al. at paragraph [0063] and Figure 7 (which graphically depicts a selected wear article 16, which is represented by data set 40 which comprises data points 80, and virtual model 24 which includes data set 82 with a plurality of data points 84). Figure 6 of Feld et al. shows the process by which a wear article can be fitted to a model, which requires that the vertice positions be calculated, a collision detection routine be executed and a comparison of the new vertice positions be made with the material properties associated with the wear article (steps 98, 100 & 102). Thus, there is no disclosure in Feld et al. of the use of a set of weights either in relation to defining an object model which represents an avatar or in defining an object model which represents a clothing model.

Indeed, the shortcomings of Feld et al. in this regard were clearly stated in the present application.

> In this same field, US2001/0026272A1 also describes a system and method for designing a wear article for a virtual three-dimensional model object, wherein a wear article can be displayed on the object by comparing three-dimensional data relating to the article and the object to determine the non-intersection thereof. The shape of the wear article is then conformed to the shape of the object using data relating to a material type of the article, which specifies how the wear article may stretch, flex, sag etc. on the virtual model object to better approximate the real-life look and fit of the article.
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> From a review of the above it should be apparent that whilst the dynamic physical simulation of cloth dynamics can produce very good cloth simulation results, the computational intensity required to perform dynamic cloth-dynamics simulations is exceptionally high, and is unsuitable for many consumer level general purpose computers or other processing devices such as personal digital assistants or mobile phones. Furthermore, the computation required is also too high to achieve good performance from server computers running an on-line shopping application, and which may receive many requests for an avatar clothing model from different users in a relatively short time frame. Therefore, in order to overcome this problem, an alternative cloth modelling method is required which is of reduced computational intensity, but which achieves results of substantially similar quality to the existing cloth-dynamics simulation methods.

See, present specification at page 2, lines 6-12, and 24-34. Moreover, as noted previously, none of the Examiner's cited passages of Feld et al. even mention "a set of weights" let alone the use of a set of weights in relation to defining an object model

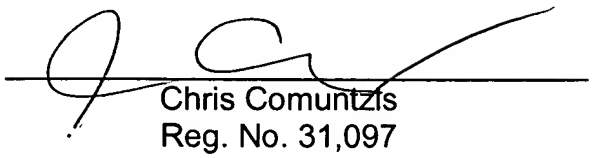
which represents an avatar or in defining an object model which represents a clothing model.

Since the cited art does not teach or suggest the present claim limitations of storing "a set of weights" and "applying the set of weights" (see independent claims 25, 28 and 31), Feld et al. cannot anticipate the present claims. Accordingly, independent claims 25, 28 and 31 and their respective dependent claims patentably define over Feld et al.

Therefore, in view of the above remarks, it is respectfully requested that the application be reconsidered and that all of claims 25 and 27-32, standing in the application, be allowed and that the case be passed to issue. If there are any other issues remaining which the Examiner believes could be resolved through either a supplemental response or an Examiner's amendment, the Examiner is respectfully requested to contact the undersigned at the local telephone exchange indicated below.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
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